Appendix 13.6-F Explosives and Detonators Transportation Procedure

TELKWA COAL
LIMITED

1. PURPOSE

This document describes the procedure to be used when transporting and handling explosives, detonators, and related accessories from the Explosive Magazine to the blast pattern.

2. SCOPE

This procedure applies to all authorized personnel that are involved in transporting explosives, detonators, and related accessories from the Explosive Magazine to the blast pattern.

The program will be designed to prevent Incidents, Emergencies, and/or Dangerous Occurrences that could endanger personnel or have a negative effect on mine production.

3. RESPONSIBILITIES

The Mine Manager will:

- Ensure that all personnel handling explosives and detonators are properly trained in this procedure and adhere to the guidelines while performing these tasks.

4. PROCEDURE FOR TRANSPORTATION OF EXPLOSIVES AND DETONATORS ON THE MINESITE

4.1 Safety Assessment

1. Ensure you are fit for duty;
2. Ensure that you have the required qualifications and training and are authorized by the Mine Manager to carry out these tasks;
3. Participate in a pre-shift safety meeting; and
4. Complete Field Level Hazard Assessment (SLAM cards).

4.2 Vehicle Inspection

1. Blasting accessories such as detonators, delays, boosters, and detonating cord will be transported by trained personnel to the blast site in a dedicated and approved vehicle identified as the blasting truck.
2. The Orica Canada Limited (Orica) explosives contractor will transport the explosives from the Explosive Facility to the blast pattern using a truck designed for the safe delivery of Ammonium Nitrate and Fuel

Oil (ANFO) and Emulsion and blending of these materials at the drillhole. The explosive transport and blending truck used for transport will be capable of delivering explosives blends suited for both wet and dry drillhole conditions.

3. The explosive transport and blending truck will meet all conditions specified under British Columbia (BC)'s Occupational Health and Safety Regulation, BC Reg 296/97, and the Health, Safety and Reclamation Code for Mines in British Columbia (British Columbia Ministry of Energy, Mines and Petroleum Resources [BC MEMPR] and British Columbia Ministry of Environment and Climate Change Strategy [BC MECCS]. 2019) (Code).
4. Prior to entering the magazine area and as part of the operator's daily inspection, the vehicle used to transport and house the explosives must meet the criteria as described in Part 21 Blasting Operations in "Transportation and Handling" Sections 21.22 to 21.41 of the Occupational Health and Safety Regulation, BC Reg 296/97 under the *BC Workers Compensation Act*, RSBC 2019, c 1.
5. The following inspection will be performed on each vehicle prior to the transport of any explosives:
    - 5.1. The vehicle will conform to requirements set out by Transport Canada in the *Transportation of Dangerous Goods Act*, SC 1992, c 34.
    - 5.2. Fire extinguishers are filled and in working order;
    - 5.3. The electrical wiring is completely insulated and firmly secured;
    - 5.4. The fuel tank and feed lines have no leaks;
    - 5.5. The chassis, engine, pan and bottom of the conveyance are reasonably clean and free from surplus of oil and grease;
    - 5.6. The brakes and steering apparatus are in good condition;
    - 5.7. The conveyance is in sound mechanical condition;
    - 5.8. Exhaust routed away from the explosives containment on the vehicle;
    - 5.9. The vehicle will be operated by a trained person who holds a Transportation of Dangerous Goods (TDG) Certificate;
    - 5.10. The vehicle will show the appropriate TDG placards while transporting explosives; and
    - 5.11. The operator will carry a Bill of Lading in the vehicle showing the quantity, classification and UN number, Emergency Response Assistance Plan (ERAP), and the owner of the dangerous goods being transported.

4.3 Loading

1. Once the blasting truck has been inspected and documented, a Blaster will obtain the magazine keys from the combination safe located in the Mine Superintendent's office.
2. A Blaster and their helper(s) will meet at the magazine where the Blaster will open the magazines and instruct the helper(s) on the explosives products to be loaded onto the vehicle for the daily loading requirement.
3. Placards will be displayed on the side of all explosives transporting equipment as per the Transportation of Dangerous Goods *Regulations*, SOR/2001-286.

4. The detonators and packaged explosives will be stored separately (segregated) in closed aluminum constructed non sparking containers lined with wood, or other suitable material. The container will be secured to the vehicle to prevent unintentional release or escape of explosive products during transport and use. The personnel carrying out these tasks will have required qualifications such as a valid BC Blasting Certificate and training and be authorized by the Mine Manager to carry out these tasks.

4.4 Transportation

1. Once all explosive accessories have been loaded and properly stowed in the blasters truck the Blaster will personally drive or assign a helper(s) to drive the vehicle to the blast pattern.
2. The route taken must be the most direct route to the blast pattern avoiding any stops along the route. If a route change is required, the operator if not a Blaster must inform a Blaster of the change of route. The Blaster must notify the Mine Supervisor.
3. At no time and under no circumstances will the vehicle be left unsupervised.
4. In the event of a break down of the blasting truck the operator if not a Blaster must immediately inform a Blaster of the breakdown and must not call for service of the vehicle without having a Blaster present. The Blaster must notify the Mine Supervisor who will attend and assess along with the Blaster. The Mine Supervisor will contact the Maintenance Department for assistance if the break down is deemed to not affect the explosives and is minor in nature.

4.5 Record Keeping

1. The transport and explosive blending truck will be equipped with a metering system that will enable to reconcile the amount of explosives used with the amount of explosives delivered to site. This reconciliation will be an integral part of maintaining responsible explosives use on the Project daily.
2. As part of the transport task associated with the transport and explosive blending truck a record of explosive used, transported, and returned to storage will be completed by the Orica.
3. As part of the transport task associated with the blasting truck a record of explosive used, transported, and returned to storage will be completed by the Blaster and/or Blaster Helper.

5. REGULATORY CONTEXT

Regulatory direction about the transportation of explosives and detonators on the Minesite includes:

- Section 8 of the Code specifies standards for explosive handling and transportation;
- Placards will be displayed on the side of all explosives transporting equipment as per the Transportation of Dangerous Goods Regulations, SOR/2001-286, under the *Transportation of Dangerous Goods Act*, SC 1992, c 34;
- Explosives delivery equipment will be managed under a strict maintenance program and in compliance with Natural Resources Canada (NRCAN) regulations; and

- The following are excerpts of: Part 21 Blasting Operations in "Storage, Transportation" and Handling Explosives" in Sections 21.16 through 21.41 of the Occupational Health and Safety Regulation, BC Reg 296/97 under the *Workers Compensation Act*, RSBC 2019, c 1.

Part 21 — Blasting Operations

Storage

Detonators

21.16 (1) *Detonator products must not be kept in a store or receptacle in which explosives or safety fuses, fuse lighters, igniter cords or connectors are stored, and (2) At the loading site, detonator products must be stored separately from other explosives, and in a crush resistant box which is clearly identified.*

Separate handling

21.21 *Blasting explosives and detonator products must be kept and handled separately until the last most practicable moment, before bringing them together.*

Transportation

Vehicle operation

21.22 (1)*A vehicle being used to transport explosives must be in sound mechanical condition, suitable for, and capable of, safely transporting explosives. (2) Passengers, other than those assigned to assist in handling explosives, are not permitted on a vehicle transporting explosives.*

Flammable materials

21.23 *Reasonable quantities of flammable or combustible materials may be carried by a conveyance transporting explosives at the workplace provided such materials are contained in a manner which will not cause or transmit a fire or explosion and are adequately separated from any explosives containers on the conveyance.*

Transportation of explosives

21.24 (1) *Explosives carried in a vehicle must be in a fully enclosed, locked, fire resistant fixed container or compartment, separate from the passenger compartment. (2) Detonators and electric igniters must be transported in their original containers, as shipped by the manufacturer. (3) Detonators must be adequately separated from other explosives during transport.*

Mobile drill rigs

21.25 *The transportation of explosives on a mobile drilling rig is only permitted if (a)explosives and detonators are carried in separate containers built to type 6 or type 10 magazine standard and capacities, with 2 hooded locks, and (b) the explosives and detonator containers are (i)located at least 60 cm (2 ft) apart, with the doors or lids facing at least 90° apart, (ii)located above the vehicle deck in a manner which protects the containers from contact with roadside objects and the drilling equipment, (iii)located so the contents are not endangered by any heat source on the drill unit, (iv)kept locked when outside the blasting area, and securely closed when in the blasting area, except when opened for depositing or removing their contents, and (v)attended by the blaster of record, or a qualified person designated by the blaster, at all times when explosives are being carried.*

Contact with metal

21.27 *Contact between packages containing explosives and exposed ferrous metal in a conveyance must be prevented by the use of wood, tarpaulin, or other suitable dunnage materials.*

Emergency procedures

21.28 *Before explosives are transported, the employer must establish suitable written emergency procedures, and must ensure that all workers who may be affected are adequately instructed in the procedures.*

Safe operation

21.29 *A person operating a vehicle that is transporting explosives (a) must operate the vehicle in a safe manner, consistent with prevailing road and weather conditions, and (b) must not drive faster than 90 km/h (55 mph).*

Vehicle load limit

21.30 *A vehicle transporting explosives must not be operated or permitted to operate if the load to be transported exceeds 80% of the manufacturer's rated carrying capacity for the vehicle.*

Firefighting equipment

21.31 (1) *A conveyance transporting explosives must be equipped with at least 2 fire extinguishers, of a type capable of quickly extinguishing gasoline, oil, or electrical fires and (2) The fire extinguishers must be readily available for use and must have (a) a minimum 5 BC rating for a vehicle with up to 2 000 kg (4 400 lbs) gross vehicle weight (GVW) rating, and (b) a minimum 10 BC rating for a vehicle with more than 2 000 kg (4 400 lbs) GVW rating.*

Trailer transportation

21.32 *Explosives must not be transported in a trailer, or in any type of semitrailer unless it is equipped with power brakes operable from the tractor cab.*

Railroad and highway crossings

21.33 *The operator of a vehicle transporting explosives must, before crossing (a) a railroad track protected by an automatic signal device, reduce the speed of the vehicle and establish that the crossing can be made in safety, and (b) a main highway, or a railroad track that is not protected by an automatic signal device, completely stop the vehicle and only proceed when the way is safely clear.*

Prior servicing

21.34 *Explosives must not be loaded on or in a vehicle unless the vehicle has been fully serviced.*

Overnight parking

21.35 (1) *When a vehicle carrying or containing explosives is to be parked overnight, the premises in which the vehicle will be parked must not be used for any other purpose which may involve any substance likely to cause explosion or fire and (2) Such premises must be away from habitation and buildings that contain flammable materials.*

Handling Explosives

General

21.36 *Explosive materials must be stored, transported, handled and used in the manner recommended by the manufacturer.*

Ignition sources prohibited

21.40 (1) *Smoking is prohibited within 15 m (50 ft) of where explosives are stored, being handled, or are in loaded holes and (2) Open flame ignition sources must not be permitted within 15 m (50 ft) of where explosives are stored, being handled, or are in loaded holes, unless the blaster of record gives consent.*